

**REMARKS**

Claims 12-22 are all the claims pending in the application.

Claim 17 has been amended to be written in independent form and for purposes of further clarity. Claims 18-20 have also been amended for purposes of clarity. New claim 22 has been added based on, for example, page 3 of the specification.

Entry of the above amendments is respectfully requested.

**I. Response to Rejection of claims 17-20 under 35 U.S.C. § 112, second paragraph**

Claims 17-20 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Without acquiescing the merits of the rejection, claim 17 has been amended for purposes of further clarity.

With respect to "close to" recited in claim 17, it is respectfully submitted that one of skill in the art would understand the meaning of the phrase. Specifically, one of skill in the art would understand that, since the classical galvanization process has an operation of introduction of a hot strip into a liquid Zn bath, the temperature of the strip being normally "close to" the temperature of the bath. In addition, the Example given in the specification, the strip temperature, before it enters the bath, is brought by cooling from 770-810°C to 470°C while the melting temperature of pure Zn is 420°C. See page 8, last paragraph to page 9, first paragraph. Thus, it is respectfully submitted that the meaning and scope of the claim is clear.

Additionally, with respect to "principally contains Zn" recited in claim 21, it is also submitted that one of skill in the art would understand the meaning of the phrase. Specifically, "principally contains Zn" means that the galvanization bath is not a Zn alloy, as considered in claim 17, but a Zn bath which contains the usual impurities in addition to Zn. It is respectfully

submitted that the meaning and scope of the claim is clear.

In view of the above, withdrawal of the rejection is respectfully requested.

**II. Response to Rejection of claims 17-20 under 35 U.S.C. § 103(a)**

Claims 17-20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Higo et al. (US 2001/0001049) in view of Claessens et al. (US 2001/0007280) and Fujita et al. (US 2004/0202889).

Applicants respectfully traverse the rejection.

It is respectfully submitted that the claimed process and composition are different from the cited art.

With respect to Higo, the Examiner refers to examples 2 and 4 and to Tables 3 and 7. However, none of the examples of Table 3 disclose the same composition as recited in claim 17.

- XII contains no Mo, and thus, it would not have the required mechanical properties. In addition, it is only a reference example in Higo and could not solve the technical problem defined in the specification of the present application. Thus, there would be no reason for one of ordinary skill in the art to notice this particular example or to combine it with any other cited art.

- XIII contains too much Cr, which would be detrimental to its ability to be galvanized.

- XIV contains too much Si and Ni (which in the present invention is present as an impurity only). Thus, the presence of Si at this level would be detrimental to the ability for the sheet to be galvanized. In addition, an addition of Ni to the steels of the present invention would modify their mechanical properties and increase their cost, and thus, would be of no use.

With respect to Table 7, there are also no examples within the scope of claim 17.

- XXVIII has no Mo. Thus, it would not have the required mechanical properties.

- XXIX has too much Si, C and Ni. As with XIV above, an increase of the C content in

the invention would lead to different mechanical properties and would not be satisfactory.

- XXX contains V and W. V must be avoided in the present invention because it would form carbides. Thus, less C would be available for forming the martensite which is necessary for obtaining the desired mechanical properties. Also, addition of W would somewhat modify the mechanical properties and uselessly increase the cost of the steel.

- XXXI has not enough Mn and contains Nb, which would have the same drawbacks than V.

In addition, Higo teaches that preferably the steel must contain at least one element among Ti, Nb, V and W. This is not required in the present invention, which only allows some Ti for reasons related to the mechanical properties.

Also, the steels of Higo are mainly used to make building materials, and an important property is their resistance to fire, and secondarily their formability. But, a very high mechanical strength in normal conditions of use and an excellent ability to be galvanized are not required, while these are important for the present invention.

Claessens discloses a thermal treatment which avoids the formation of bainite during cooling. But the steels it describes have no Al and may contain more Si and Cr than the present invention. The absence of Al is an important feature of the present invention, since it must be replaced by Si for deoxidizing the steel. And Si would be detrimental to the ability of the steel to be galvanized.

Fujita cannot be compared exactly to the other ones and to the invention. The cooling after annealing and before galvanization is performed in two steps, the second being faster than the first. These treatments are used on steels which have wide compositional ranges, but its particular samples are different from the present invention.

Further, Fujita aims at solving the problem of the obtaining good galvanization ability,

but in a manner different from the present invention. In Fujita, to this end, Mn is added to the bath. *See* [0098]. The oxides of Si and Mn, which cause wettability problems, are formed within the bath and not at the strip surface so they cannot prevent Zn from adhering to the steel surface. No hint is given in Fujita for solving this problem by limiting the steel composition itself. Moreover, the steel composition of Fujita is extremely broad and can lead to different types of steels, such as TRIP or Dual-Phase, with different microstructures, which generally have mechanical properties very different from those of the steels of the present invention.

For at least the above reasons, it is respectfully submitted that Higo in combination with the other cited art does not render the present invention according to claim 17 obvious.

Accordingly, it is submitted that claim 17 is patentable over the cited art.

In addition, claims 18-20 and 22 depend from claim 17 and thus, it is respectfully submitted that these claims are patentable for at least the same reasons as claim 17.

In view of the above, withdrawal of the rejection is respectfully requested.

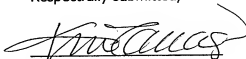
### **III. Conclusion**

For the foregoing reasons, reconsideration and allowance of claims 12-22 is respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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**23373**

CUSTOMER NUMBER

Date: December 24, 2008